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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/988,467 | SCHURIG ET AL. | |
| | Examiner | Art Unit | |
| | JASON E. MATTIS | 2461 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on 23 June 2009.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10,12,14,17-32 and 40-53* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *-10,12,14,17-32 and 40-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This Office Action is in response to the Amendment filed 6/23/09. Claims 11, 13, 15, 16, and 33-39 have been canceled. New claims 40-53 have been added Claims 1-10, 12, 14, 17-32 and 40-53 are currently pending in the application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder (U.S. Patent US 7,200,152 B2) in view of Leyba et al. (U.S. Patent US 6,276,502 B1) and Charlebois et al. (U.S. Patent 4,255,609).

**With respect to claim 1**, Binder discloses a network **(See column 7 line 49 to column 8 line 6 and Figure 8 of Binder for reference to a network 80)**. Binder also discloses a first network device coupled to an AC power source and including a first data connector and a first power connector **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to a node 70d, which is a first network device, coupled to an AC power source 52, an LT line coupler 42, which acts as a first data connector and a first power connector connecting both data and power**

**from the node 70d to the line 61d)**. Binder further discloses a cable including wires with a first portion configured to carry data and a second portion configured to carry power **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to both data and power being carrier on the wires line 61d)**. Binder also discloses the cable including connectors for both power and data at both ends **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to the line 61d connecting both power and data from the LT line coupler 42 of node 70d to an RT line coupler 43 of node 70c)**. Binder further disclose a second network device coupled to the first network device via the cable **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to node 70c, which is a second network device, coupled to node 70d via the line 61d)**. Binder also discloses the second network device including a second data connector and a second power connector that are coupled to connectors of the cable **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to the second node 70c including an RT line coupler 43, which acts as a second data connection and a second power connector, coupled to power and data lines of the line 61c)**. Binder further discloses the second network device is configured to operate without a direct coupling to an AC power source **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to node 70c operating without a direct coupled to power source 52)**. Binder also discloses that the second network device is configured to receive data and power from the first network device via the cable **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to**

**node 70c receiving data and power from node 70d via the line 61d)**. Binder does not specifically disclose the cable including first and second sets of wires within an outer sheath as well as separate power and data connectors located at either end of the cable. Binder does not specifically disclose the cable being an outdoor, above-ground cable that is greater than 100 meters in length.

**With respect to claim 1**, Leyba et al., in the field of communications, discloses a cable including first and second sets of wires within an outer sheath as well as separate power and data connectors located at either end of the cable **(See column 5 line 24 to column 6 line 23 of Leyba et al. for reference to a cord 10 including a plurality of power conductors 12 and a plurality of data transmission conductors 14 within a shielding, which is an outer sheath, and for reference to the cord 10 including an electrical power connector 24 and a data connector 26 at one end and an electrical power connector 28 and a data connector 32 at the other end)**. Using a cable including first and second sets of wires within an outer sheath as well as separate power and data connectors located at either end of the cable has the advantage of allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Leyba et al., to combine using a cable with separate power and data connectors, as suggested by Leyba et al., with the system and method of Binder, with the motivation being to allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

**With respect to claim 1**, although the combination of Binder and Leyba et al. does not specifically disclose a cable that is an outdoor, above ground cable that is greater than 100 meters in length, the exact length and type of cable used to connect devices is an obvious design choice that must be made when implementing a wired network. Charlebois et al., in the field of communications, discloses the use of outdoor, above ground telecommunications cables that are greater than 100 meters in length **(See column 1 lines 8-34 of Charlebois et al. for reference to outdoor, above ground cables that extend for greater than 300 meters)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is an outdoor, above ground cable and greater than 100 meters in length, such as the cable disclosed by Charlebois et al., with the system and method of Binder and Leyba et al. with the motivation being to connect devices over long distances in a wired network.

**With respect to claim 44**, Binder discloses that the first network device includes a power conditioner unit coupled to the AC power source and configured to receive AC power form the AC power source, perform filtering, and provide conditioned AC power to a power supply within the first network device **(See column 7 line 35 to column 8 line 6 and Figures 7 and 8 of Binder for reference to node 70d including a power supply 41, which is a power conditioner unit, coupled to power source 52 and configured to receive AC power from power source 52, perform filtering, and provide conditioned AC power to device 70d through power supply 41)**.

4. Claims 2 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al. and Charlebois et al. and in further view of Knapp (U.S. Patent 5,726,851).

**With respect to claims 2 and 41**, although the combination of Binder, Leyba et al., and Charlebois et al. does not specifically disclose using a coaxial cable of sufficient gauge to support currents up to 60 amperes, the exact ampere rating of a cable used to supply power is an obvious design choice must be made when implementing a wired network. Knapp, in the field of communications, discloses the use a coaxial cable of sufficient gauge to support currents up to 60 amperes **(See column 2 lines 40-44 and column 5 lines 51-65 of Knapp for reference to a coaxial cable that allows current through a central conductor up to 60 amperes before generating an open circuit)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is a coaxial cable of sufficient gauge to support currents up to 60 amperes, such as the cable disclosed by Knapp, with the system and method of Binder, Leyba et al., and Charlebois et al., with the motivation being to connect devices that require power to be delivered up to a maximum of 60 amperes.

5. Claims 3, 4, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al. and Charlebois et al. and in further view of Hosaka et al. (U.S. Pat. 6448500 B1).

**With respect to claim 3**, Binder discloses the first network device operating in a mode in which data is supplied to the second network device over twisted pairs in parallel **(See column 3 lines 6-25, column 6 lines 23-60 and Figure 6 of Binder for reference to supplying data between devices using twisted pairs in parallel)**. The combination of Binder, Leyba et al., and Charlebois et al. does not specifically disclose the first set of wires including at least four unshielded twisted pairs configured to carry data.

**With respect to claim 4**, the combination of Binder, Leyba et al., and Charlebois et al. does not specifically disclose an insulated sheath surrounding the unshielded twisted-wire pairs.

**With respect to claim 12**, Binder discloses physical layer transceivers at the first network device configured to operate in full duplex switched packet transmission mode **(See column 3 lines 6-25, column 6 lines 23-60 and Figure 6 of Binder for reference to switching data in full duplex mode between nodes via twisted conductor pairs)**. The combination of Binder, Leyba et al., and Charlebois et al. does not specifically disclose the first set of wires including at a plurality unshielded twisted pairs configured to carry data.

**With respect to claims 3, 4, and 12**, Hosaka et al., in the field of communications, discloses a cable including at least four unshielded twisted-wire pairs to carry data including an insulated sheath surrounding the unshielded twisted-wire pairs **(See column 1 lines 32-48 and Figure 4 of Hosaka et al. for reference to a cable including six unshielded twisted pair wires 31 surrounded by an insulating**

**external coating 34)**. Using a cable including at least four unshielded twisted-wire pairs to carry data including an insulated sheath surrounding the unshielded twisted-wire pairs has the advantage of allowing multiple physical data channels to be implemented using a single cable such that the bandwidth of the cable is increased.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Hosaka et al., to combine using a cable, as suggested by Hosaka et al., with the system and method of Binder, Leyba et al., and Charlebois et al., with the motivation being to allow multiple physical data channels to be implemented using a single cable such that the bandwidth capacity of the cable is increased.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al., Charlebois et al., and Hosaka et al., and in further view of Lemke (U.S. Patent 4,800,236).

**With respect to claim 5**, the combination of Binder, Leyba et al., Charlebois et al., and Hosaka et al. does not disclose foil sheathing and a drain wire.

**With respect to claim 5**, Lemke, in the field of communications, discloses a cable with foil sheathing and a drain wire **(See column 7 lines 25-44 of Lemke for reference to a cable with foil sheathing and a drain wire)**. Using foil sheathing and a drain wire has the advantage of protecting a cable against outside interference.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Lemke, to combine using foil sheathing and

a drain wire, as suggested by Lemke, with the system and method of Binder, Leyba et al., Charlebois et al., and Hosaka et al., with the motivation being to protect a cable against outside interference.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al., Charlebois et al., Hosaka et al., and Lemke, and in further view of Lhota (U.S. Patent 6,399,883 B1).

**With respect to claim 6**, the combination of Binder, Leyba et al., Charlebois et al., Hosaka et al., and Lemke does not disclose including a suspension line bound to the cable.

**With respect to claim 6**, Lhota, in the field of communications, discloses a cable including a suspension line **(See column 2 lines 45-64 of Lhota for reference to using a plastic suspension line for a cable)**. Using a suspension line has the advantage of giving a cable extra support.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Lhota, to combine using a suspension line, as suggested by Lhota, with the system and method of Binder, Leyba et al., Charlebois et al., Hosaka et al., and Lemke,, with the motivation being to give a cable extra support.

8. Claims 7 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al., Charlebois et al., and Hosaka et al., and in further view of Elms et al. (U.S. Patent 5,677,974).

**With respect to claims 7 and 8**, the combination of Binder, Leyba et al., Charlebois et al., and Hosaka et al. does not disclose a hollow conduit for optical fiber installation having walls of sufficient rigidity to be self supporting and having a sheath enclosing the cable.

**With respect to claims 7 and 8**, Elms et al., in the field of communications, discloses a cable with a hollow conduit for optical fiber installation having walls of sufficient rigidity to be self supporting and having a sheath enclosing the cable **(See the abstract of Elms et al. for reference to a hybrid cable having a hollow conduit for optical fiber installation that is self supporting and enclosed by a sheath)**. Using a cable with a hollow conduit for optical fiber installation having walls of sufficient rigidity to be self supporting and having a sheath enclosing the cable has the advantage of allowing optical fiber to be installed in the same cable as electrical wiring.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Elms et al., to combine using a cable with a hollow conduit for optical fiber installation having walls of sufficient rigidity to be self supporting and having a sheath enclosing the cable, as suggested by Elms et al., with the system and method of Binder, Leyba et al., Charlebois et al., and Hosaka et al., with the motivation being to allow optical fiber to be installed in the same cable as electrical wiring.

9. Claims 9-11 and 39 rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Wood, Leyba et al., Charlebois et al., and Hosaka et al., and in further view of Batruni et al. (U.S. Patent 6,215,785 B1).

**With respect to claim 9**, the combination of Binder, Leyba et al., Charlebois et al., and Hosaka et al. et al. does not disclose clocking at a lower rate than design specification.

**With respect to claim 9**, Batruni et al., in the field of communications, discloses clocking at a lower rate than design specification **(See column 3 lines 8-31 of Batruni et al. for reference to clocking data transmission at substantially lower rates)**. Clocking at a lower rate than design specification has the advantage of allowing transmission to be performed over a great distance **(See column 3 lines 8-31 of Batruni et al. for reference to this advantage)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Batruni et al., to combine clocking at a lower rate than design specification, as suggested by Batruni et al., with the system and method of Binder, Leyba et al., Charlebois et al., and Hosaka et al., with the motivation being to allow transmission to be performed over a great distance.

**With respect to claim 10**, Binder discloses transceivers configured to operate over the UTP wiring pairs in full duplex switched packet transmission mode **(See column 3 lines 6-25 and claim 40 of Binder for reference to the network including**

**transceivers that operate over the copper twisted pair wiring in a full duplex packet transmission mode)**.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al. and Charlebois et al. and in further view of Plyler et al. (U.S. Pat. 5145402).

**With respect to claim 14**, the combination of Binder, Leyba et al., and Charlebois et al. does not disclose using a protective contact dielectric gel for the connectors.

**With respect to claim 14**, Plyler et al., in the field of communications, discloses using protective contact dielectric gel for connectors **(See column 3 line 61 to column 4 line 14 and claim 9 of Plyler et al. for reference to using a silicon dielectric gel within the contact area of connectors)**. Using protective contact dielectric gel has the advantage of sealing, protecting, and preserving electrical characteristics of the contact **(See column 4 lines 9-12 for reference to this advantage)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Plyler et al., to combine using protective contact dielectric gel, as suggested by Plyler et al., with the system and method of Binder, Leyba et al., and Charlebois et al., with the motivation being to seal, protect, and preserve electrical characteristics of a contact.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Charlebois et al.

**With respect to claim 17**, Hosaka et al. discloses a cable comprising a first section including at least four unshielded twisted-wire pairs configured to carry data between first and second network devices coupleable to opposing first and second ends of the cable **(See column 1 lines 6-10, column 1 lines 31-48, and Figure 4 of Hosaka et al. for reference to a cable having six pairs of balanced unshielded twisted pair wires 41 for signal transmission between electronic equipment coupled to ether end of the cable)**. Hosaka et al. also discloses a second section including at least a pair of insulated wires configured to carry power from the first network device to the second network device **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to a pair of power supply wires 32 surrounded by an insulating external coating 34 to carry power between the electronic equipment)**. Hosaka et al. discloses a weather-resistant outer sheath surrounding at least the first and second section **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to the insulating external coating 34 being a weather-resistant outer sheath surrounding the balanced unshielded twisted pair wires 31 and the power supply pair wires 32)**. Hosaka et al. does not specifically disclose first and second connectors respectively terminating the first and second sections at the first end of the cable. Hosaka et al. also does not specifically disclose the cable being greater than 100 meters in length.

**With respect to claim 17**, Leyba et al., in the field of communications, discloses a cable with separate power and data connectors located at either end of the cable **(See column 5 line 24 to column 6 line 23 of Leyba et al. for reference to a cord 10 including an electrical power connector 28 and a data connector 32 at the other end respectively terminating power conductors 12 and data transmission conductors 14 of the cord 10)**. Using a cable including separate power and data connectors located at either end of the cable has the advantage of allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Leyba et al., to combine using a cable with separate power and data connectors, as suggested by Leyba et al., with the system and method of Hosaka et al., with the motivation being to allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

**With respect to claim 17**, although the combination of Hosaka et al. and Leyba et al. does not specifically disclose a cable that is 100 meters in length, the exact length of cable used to connect devices is an obvious design choice that must be made when implementing a wired network. Charlebois et al., in the field of communications, discloses the use of outdoor, above ground telecommunications cables that are greater than 100 meters in length **(See column 1 lines 8-34 of Charlebois et al. for reference to outdoor, above ground cables that extend for greater than 300 meters)**. Thus, it

would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is an outdoor, above ground cable and greater than 100 meters in length, such as the cable disclosed by Charlebois et al., with the system and method of Hosaka et al. and Leyba et al. with the motivation being to connect devices over long distances in a wired network.

12. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Charlebois et al. and in further view of Elms et al.

**With respect to claims 18 and 19**, the combination of Hosaka et al., Leyba et al., and Charlebois et al. does not disclose a hollow conduit for optical fiber installation having a sheath enclosing the cable and a messenger wire to support installation of the optical fiber.

**With respect to claims 18 and 19**, Elms et al., in the field of communications, discloses a cable with a hollow conduit for optical fiber installation having a sheath enclosing the cable and a messenger wire to support installation of the optical fiber **(See the abstract and column 3 lines 53-58 of Elms et al. for reference to a hybrid cable having a hollow conduit for optical fiber installation that is enclosed by a sheath and for reference to a pulling ribbon, which is a messenger wire to support installation of the optical fiber)**. Using a cable with a hollow conduit for optical fiber installation having a sheath enclosing the cable and a messenger wire to support

installation of the optical fiber has the advantage of allowing optical fiber to be installed in the same cable as electrical wiring.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Elms et al., to combine using a cable with a hollow conduit for optical fiber installation having a sheath enclosing the cable and a messenger wire to support installation of the optical fiber, as suggested by Elms et al., with the system and method of Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to allow optical fiber to be installed in the same cable as electrical wiring.

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Charlebois et al. and in further view of Aslami et al. (U.S. Patent 5,369,518).

**With respect to claim 20**, the combination of Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose the power section including a ground return line.

**With respect to claim 20**, Aslami et al., in the field of communications, discloses using a ground return line **(See column 4 lines 19-35 for reference to a cable using a earth ground return path, which is a ground return line)**. Using a ground return line has the advantage of protecting against short circuits.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Aslami et al., to combine using a ground

return line, as suggested by Aslami et al., with the system and method of Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to protect against short circuits.

14. Claim 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Charlebois et al., and in further view of Lemke.

**With respect to claim 21**, the combination of Hosaka et al., Leyba et al., and Charlebois et al. does not disclose foil sheathing and a drain wire.

**With respect to claim 21**, Lemke, in the field of communications, discloses a cable with foil sheathing and a drain wire **(See column 7 lines 25-44 of Lemke for reference to a cable with foil sheathing and a drain wire)**. Using foil sheathing and a drain wire has the advantage of protecting a cable against outside interference.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Lemke, to combine using foil sheathing and a drain wire, as suggested by Lemke, with the system and method of Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to protect a cable against outside interference.

15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al., and Charlebois et al. and in further view of Belling (U.S. Patent 3,750,281).

**With respect to claim 22**, the combination of Hosaka et al., Leyba et al., and Charlebois et al. does not disclose including a suspension line bound to the cable.

**With respect to claim 22**, Belling, in the field of communications, discloses a cable including a removable suspension line **(See the abstract, column 3 lines 57-59, and Figure 4 of Belling for reference to using a removable suspension wire attached to a cable)**. Using a removable suspension line has the advantage of giving a cable extra support.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Belling, to combine using a removable suspension line, as suggested by Belling, with the system and method of Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to give a cable extra support.

16. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Hosaka et al., Leyba et al. and Charlebois et al.

**With respect to claim 23**, Binder discloses a network comprising a first node including a data connector and a power connector **(See column 7 line 35 to column 8 line 6 and Figures 7-8 of Binder for reference to a network including a node 70 including both a data and power connector)**. Binder also discloses a cable including a first portion configured to carry data and a second portion configured to carry power **(See column 7 line 35 to column 8 line 6 and Figures 7-8 of Binder for reference to a wire transmitting both data and power in parallel)**. Binder discloses a connector

that terminates the first portion and the second portion at one end of the cable with the connector being coupled to data and power connectors **(See column 7 lines 20-47, claim 13, and Figure 7 of Binder for reference to connections from both the data and power parts of the wire line to the network node with the connectors terminating both the power and data signals at the connectors of the network node)**. Binder does not specifically disclose the first portion including at least four unshielded twisted pairs of wires and the second portion including at least two insulated wires with a weather resistant outer sheath surrounding the first and second portions. Binder also does not specifically disclose separate power and data connectors located at either end of the cable. Binder also does not specifically disclose the cable being greater than 100 meters in length.

**With respect to claim 23**, Hosaka et al., in the field of communications, discloses a cable having a weather resistant outer sheath and including at least four unshielded twisted-wire pairs to carry data and two insulated wires to carry power **(See column 1 lines 32-48 and Figure 4 of Hosaka et al. for reference to a cable having an insulating external coating 34, which is a weather resistant outer sheath, including six unshielded twisted pair wires 31 and two insulated power supply pair wires 32)**. Using a cable having a weather resistant outer sheath and including at least four unshielded twisted-wire pairs to carry data and two insulated wires to carry power has the advantage of allowing multiple physical data channels to be implemented using a single cable such that the bandwidth of the cable is increased.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Hosaka et al., to combine using a cable, as suggested by Hosaka et al., with the system and method of Binder, with the motivation being to allow multiple physical data channels to be implemented using a single cable such that the bandwidth capacity of the cable is increased.

**With respect to claim 23**, Leyba et al., in the field of communications, discloses a cable including first and second sets of wires with separate power and data connectors located at either end of the cable **(See column 5 line 24 to column 6 line 23 of Leyba et al. for reference to a cord 10 including a plurality of power conductors 12 and a plurality of data transmission conductors 14 within a shielding, which is an outer sheath, and for reference to the cord 10 including an electrical power connector 24 and a data connector 26 at one end and an electrical power connector 28 and a data connector 32 at the other end)**. Using a cable including first and second sets of wires with separate power and data connectors located at either end of the cable has the advantage of allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Leyba et al., to combine using a cable with separate power and data connectors, as suggested by Leyba et al., with the system and method of Binder and Hosaka et al., with the motivation being to allow both data and

power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

**With respect to claim 23**, although the combination of Binder, Hosaka et al., and Leyba et al. does not specifically disclose a cable that is greater than 100 meters in length, the exact length of cable used to connect devices is an obvious design choice that must be made when implementing a wired network. Charlebois et al., in the field of communications, discloses the use of outdoor, above ground telecommunications cables that are greater than 100 meters in length **(See column 1 lines 8-34 of Charlebois et al. for reference to outdoor, above ground cables that extend for greater than 300 meters)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is an outdoor, above ground cable and greater than 100 meters in length, such as the cable disclosed by Charlebois et al., with the system and method of Binder, Hosaka et al., and Leyba et al. with the motivation being to connect devices over long distances in a wired network.

**With respect to claim 24**, Binder discloses physical layer transceivers at the nodes configured to operate over the UTP wiring pairs in full duplex switched packet transmission mode **(See column 3 lines 6-25 and claim 40 of Binder for reference to the network including transceivers that operate over the copper twisted pair wiring in a full duplex packet transmission mode)**.

**With respect to claim 25**, Binder discloses the first node including a switch circuit and a plurality of physical layer transceivers configured to selectively connect

different ones of the pairs **(See the abstract of Binder for reference to the node being a router meaning it inherently must include a switch selectively connecting different pairs of transceivers to route data from an input port to an output port)**.

**With respect to claim 26**, Binder discloses that the first node includes a router **(See the abstract of Binder for reference to the node being a router)**.

**With respect to claim 27**, Binder discloses the first node including a power supply configured to provide power for the second portion of the cable **(See column 7 line 35 to column 8 line 6 and Figures 7-8 of Binder for reference to node 70 including power supply 41 to provide power to the second portion of the wire)**.

17. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Hosaka et al., Leyba et al., and Charlebois et al., and in further view of Heavey et al. (U.S. Patent 4,468,571).

**With respect to claims 28 and 29**, the combination of Binder, Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose using a power control switch to control power on a bus based on commands as well as provide transient voltage protection.

**With respect to claims 28 and 29**, Heavey et al., in the field of communications, discloses using a power control switch to control power on a bus based on commands as well as providing transient voltage protection **(See the abstract and column 5 lines 25-36 of Heavey et al. for reference to using a switch to control voltage of a power line based on control signals and for reference to providing transient voltage**

**protection)**. Using a power control switch to control power on a bus based on commands as well as providing transient voltage protection has the advantage of allowing power provided by a power line to be more tightly controlled and protected.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Heavey et al., to combine using a power control switch to control power on a bus based on commands as well as provide transient voltage protection, as suggested by Heavey et al., with the system and method of Binder, Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to allow power provided by a power line to be more tightly controlled and protected.

18. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Hosaka et al., Leyba et al., and Charlebois et al., and in further view of Kuo (U.S. Patent 6,174,182 B1).

**With respect to claims 30 and 31**, the combination of Binder, Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose data connectors having plugs and receptacles that interlock with a secure mechanical clasping mechanism to shield contact surfaces.

**With respect to claims 30 and 31**, Kuo, in the field of communications, discloses data connectors having plugs and receptacles that interlock with a secure mechanical clasping mechanism to shield contact surfaces **(See column 2 line 48 to column 3 line 34 and Figures 3 and 4 of Kuo for reference to a cable connector having receptacles that interlock using a clasp 29 to shield contact surfaces of**

**the connector)**. Using connectors having plugs and receptacles that interlock with a secure mechanical clasping mechanism to shield contact surfaces has the advantage of allowing contact surfaces to be protected in harsh settings.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Kuo, to combine using a connector, as suggested by Kuo, with the system and method of Binder, Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to allow contact surfaces to be protected in harsh settings.

19. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Charlebois et al.

**With respect to claim 32**, Hosaka et al. discloses a cable comprising an outer sheath **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to a cable comprising an insulating external coating 34, which is an outer sheath)**. Hosaka et al. also discloses a first means for carrying data from a first end to a second end of the cable **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to balanced unshielded twisted pair wires 31, which comprise a first means, for signal transmission between ends of the cable)**. Hosaka et al. further discloses a second means for carrying power from the first end to the second end of the cable **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to power supply pair wires 32, which comprise a second means, for transmitting**

**power between ends of the cable)**. Hosaka et al. does not specifically disclose the cable being 100 meters in length.

**With respect to claim 32**, although Hosaka et al. does not specifically disclose a cable that is greater than 100 meters in length, the exact length of cable used to connect devices is an obvious design choice that must be made when implementing a wired network. Charlebois et al., in the field of communications, discloses the use of outdoor, above ground telecommunications cables that are greater than 100 meters in length **(See column 1 lines 8-34 of Charlebois et al. for reference to outdoor, above ground cables that extend for greater than 300 meters)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is an outdoor, above ground cable and greater than 100 meters in length, such as the cable disclosed by Charlebois et al., with the system and method of Hosaka et al. with the motivation being to connect devices over long distances in a wired network.

20. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al. and Charlebois et al. and in further view of Kleyer et al. (U.S. Patent 5,372,840).

**With respect to claim 40**, although the combination of Binder, Leyba et al., and Charlebois et al. does not specifically disclose using 10 to 16 gauge wires, the exact gauge of wires used in a cable is an obvious design choice that must be made when implementing a wired network. Kleyer et al., in the field of communications, discloses

the use of a cable including 10 gauge wires **(See column 9 lines 49-65 of Kleyer et al. for reference to a cable using 10 gauge wires)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable using 10 gauge wires, such as the cable disclosed by Kleyer et al., with the system and method of Binder, Leyba et al., and Charlebois et al. with the motivation being to connect devices using the bandwidth allotted by 10 gauge wires as dictated by design choice.

21. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Leyba et al. and Charlebois et al. and in further view of Radian (U.S. Publication US 2002/0176403 A1).

**With respect to claims 42 and 43**, the combination of Binder, Leyba et al., and Charlebois et al. does not specifically disclose the second network device being an aerial switch connected to one or more customer premises and the first network device being coupled to a fiber backbone.

**With respect to claims 42 and 43**, Radian discloses an aerial switch connected to customer premises connected via a cable to a device coupled to a fiber backbone **(See page 1 paragraph 7, page 4 paragraph 62, and Figure 1 of Radian for reference to a equipment 122, which is an aerial switch connected to customer premises 100, connected via a cable to a data switch 130 that is coupled to a fiber optic backbone network)**. Using aerial switch connected to customer premises connected via a cable to a device coupled to a fiber backbone has the advantage of

allowing high speed data to be transmitted from a data network to users at customer premises.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Radian, to combine using the device of Radian, with the system and method of Binder, Leyba et al., and Charlebois et al., with the motivation being to allow high speed data to be transmitted from a data network to users at customer premises.

22. Claims 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Charlebois et al. and in further view of Knapp.

**With respect to claims 45 and 47**, although the combination of Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose using a coaxial cable of sufficient gauge to support currents up to 60 amperes, the exact ampere rating of a cable used to supply power is an obvious design choice must be made when implementing a wired network. Knapp, in the field of communications, discloses the use a coaxial cable of sufficient gauge to support currents up to 60 amperes **(See column 2 lines 40-44 and column 5 lines 51-65 of Knapp for reference to a coaxial cable that allows current through a central conductor up to 60 amperes before generating an open circuit)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is a coaxial cable of sufficient gauge to support currents up to 60 amperes, such as the

cable disclosed by Knapp, with the system and method of Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to connect devices that require power to be delivered up to a maximum of 60 amperes.

23. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Charlebois et al. and in further view of Kleyer et al.

**With respect to claim 46**, although the combination of Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose using 10 to 16 gauge wires, the exact gauge of wires used in a cable is an obvious design choice that must be made when implementing a wired network. Kleyer et al., in the field of communications, discloses the use of a cable including 10 gauge wires **(See column 9 lines 49-65 of Kleyer et al. for reference to a cable using 10 gauge wires)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable using 10 gauge wires, such as the cable disclosed by Kleyer et al., with the system and method of Hosaka et al., Leyba et al., and Charlebois et al. with the motivation being to connect devices using the bandwidth allotted by 10 gauge wires as dictated by design choice.

24. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Hosaka et al., Leyba et al,. and Charlebois et al. and in further view of Knapp.

**With respect to claim 48**, although the combination of Binder, Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose using a coaxial cable of

to supply power, the exact type of a cable used to supply power is an obvious design choice must be made when implementing a wired network. Knapp, in the field of communications, discloses the use a coaxial cable to supply power **(See column 2 lines 40-44 and column 5 lines 51-65 of Knapp for reference to a coaxial cable that supplies power)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is a coaxial cable to supply power, such as the cable disclosed by Knapp, with the system and method of Binder, Hosaka et al., Leyba et al., and Charlebois et al., with the motivation being to connect devices that require power to be delivered up to a maximum of 60 amperes.

25. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binder in view of Hosaka et al., Leyba et al., and Charlebois et al. and in further view of Kleyer et al.

**With respect to claim 46**, although the combination of Binder, Hosaka et al., Leyba et al., and Charlebois et al. does not specifically disclose using 10 to 16 gauge wires, the exact gauge of wires used in a cable is an obvious design choice that must be made when implementing a wired network. Kleyer et al., in the field of communications, discloses the use of a cable including 10 gauge wires **(See column 9 lines 49-65 of Kleyer et al. for reference to a cable using 10 gauge wires)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable using 10 gauge wires, such as the cable

disclosed by Kleyer et al., with the system and method of Binder, Hosaka et al., Leyba et al., and Charlebois et al. with the motivation being to connect devices using the bandwidth allotted by 10 gauge wires as dictated by design choice.

26. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Kleyer et al.

**With respect to claim 50**, Hosaka et al. discloses a cable comprising a first section including at unshielded twisted-wire pairs configured to carry data between first and second network devices coupleable to opposing first and second ends of the cable **(See column 1 lines 6-10, column 1 lines 31-48, and Figure 4 of Hosaka et al. for reference to a cable having six pairs of balanced unshielded twisted pair wires 41 for signal transmission between electronic equipment coupled to ether end of the cable)**. Hosaka et al. also discloses a second section including at least a pair of insulated wires configured to carry power from the first network device to the second network device **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to a pair of power supply wires 32 surrounded by an insulating external coating 34 to carry power between the electronic equipment)**. Hosaka et al. discloses an outer sheath surrounding at least the first and second section **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to an insulating external coating 34 surrounding the balanced unshielded twisted pair wires 31 and the power supply pair wires 32)**. Hosaka et al. does not specifically disclose first and second connectors respectively terminating the first and second sections at the first

end of the cable. Hosaka et al. also does not specifically disclose the at least a pair of insulated wires being between 10 and 16 gauge wires.

**With respect to claim 50**, Leyba et al., in the field of communications, discloses a cable with separate power and data connectors located at either end of the cable **(See column 5 line 24 to column 6 line 23 of Leyba et al. for reference to a cord 10 including an electrical power connector 28 and a data connector 32 at the other end respectively terminating power conductors 12 and data transmission conductors 14 of the cord 10)**. Using a cable including separate power and data connectors located at either end of the cable has the advantage of allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Leyba et al., to combine using a cable with separate power and data connectors, as suggested by Leyba et al., with the system and method of Hosaka et al., with the motivation being to allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

**With respect to claim 50**, although the combination of Hosaka et al. and Leyba et al. does not specifically disclose using 10 to 16 gauge wires, the exact gauge of wires used in a cable is an obvious design choice that must be made when implementing a wired network. Kleyer et al., in the field of communications, discloses the use of a cable including 10 gauge wires **(See column 9 lines 49-65 of Kleyer et al. for reference to**

**a cable using 10 gauge wires)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable using 10 gauge wires, such as the cable disclosed by Kleyer et al., with the system and method of Hosaka et al. and Leyba et al., with the motivation being to connect devices using the bandwidth allotted by 10 gauge wires as dictated by design choice.

27. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Kleyer et al. and in further view of Charlebois et al.

**With respect to claim 51**, although the combination Hosaka et al., Leyba et al., and Kleyer et al. does not specifically disclose a cable that is greater than 100 meters in length, the exact length of cable used to connect devices is an obvious design choice that must be made when implementing a wired network. Charlebois et al., in the field of communications, discloses the use of outdoor, above ground telecommunications cables that are greater than 100 meters in length **(See column 1 lines 8-34 of Charlebois et al. for reference to outdoor, above ground cables that extend for greater than 300 meters)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is an outdoor, above ground cable and greater than 100 meters in length, such as the cable disclosed by Charlebois et al., with the system and method of Hosaka et al., Leyba et al. and Kleyer et al. with the motivation being to connect devices over long distances in a wired network.

28. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Knapp.

**With respect to claim 52**, Hosaka et al. discloses a power and data distribution cable comprising a first section including at unshielded twisted-wire pairs configured to carry data between first and second network devices coupleable to opposing first and second ends of the cable **(See column 1 lines 6-10, column 1 lines 31-48, and Figure 4 of Hosaka et al. for reference to a power and data distribution cable having six pairs of balanced unshielded twisted pair wires 41 for signal transmission between electronic equipment coupled to ether end of the cable)**. Hosaka et al. also discloses a second section to carry power from the first network device to the second network device **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to a pair of power supply wires 32 surrounded by an insulating external coating 34 to carry power between the electronic equipment)**. Hosaka et al. discloses an outer sheath surrounding at least the first and second section **(See column 1 lines 31-48 and Figure 4 of Hosaka et al. for reference to an insulating external coating 34 surrounding the balanced unshielded twisted pair wires 31 and the power supply pair wires 32)**. Hosaka et al. does not specifically disclose first and second connectors respectively terminating the first and second sections at the first end of the cable. Hosaka et al. also does not specifically the second section including a coaxial cable of sufficient gauge to support current up to 60 amperes.

**With respect to claim 52**, Leyba et al., in the field of communications, discloses a cable with separate power and data connectors located at either end of the cable **(See column 5 line 24 to column 6 line 23 of Leyba et al. for reference to a cord 10 including an electrical power connector 28 and a data connector 32 at the other end respectively terminating power conductors 12 and data transmission conductors 14 of the cord 10)**. Using a cable including separate power and data connectors located at either end of the cable has the advantage of allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Leyba et al., to combine using a cable with separate power and data connectors, as suggested by Leyba et al., with the system and method of Hosaka et al., with the motivation being to allow both data and power to be flexible coupled from the cable to different connectors of devices on either end of the cable.

**With respect to claim 52**, although the combination of Hosaka et al. and Leyba et al. does not specifically disclose using a coaxial cable of sufficient gauge to support currents up to 60 amperes, the exact ampere rating of a cable used to supply power is an obvious design choice must be made when implementing a wired network. Knapp, in the field of communications, discloses the use a coaxial cable of sufficient gauge to support currents up to 60 amperes **(See column 2 lines 40-44 and column 5 lines 51-65 of Knapp for reference to a coaxial cable that allows current through a central**

**conductor up to 60 amperes before generating an open circuit)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is a coaxial cable of sufficient gauge to support currents up to 60 amperes, such as the cable disclosed by Knapp, with the system and method of Hosaka et al. and Leyba et al. with the motivation being to connect devices that require power to be delivered up to a maximum of 60 amperes.

29. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka et al. in view of Leyba et al. and Knapp and in further view of Charlebois et al.

**With respect to claim 53**, although the combination Hosaka et al., Leyba et al., and Knapp does not specifically disclose a cable that is greater than 100 meters in length, the exact length of cable used to connect devices is an obvious design choice that must be made when implementing a wired network. Charlebois et al., in the field of communications, discloses the use of outdoor, above ground telecommunications cables that are greater than 100 meters in length **(See column 1 lines 8-34 of Charlebois et al. for reference to outdoor, above ground cables that extend for greater than 300 meters)**. Thus, it would have been an obvious design choice for one of ordinary skill in the art at the time of the invention to combine using a cable that is an outdoor, above ground cable and greater than 100 meters in length, such as the cable disclosed by Charlebois et al., with the system and method of Hosaka et al., Leyba et al. and Knapp with the motivation being to connect devices over long distances in a wired network.

### ***Response to Arguments***

30. Applicant's arguments with respect to claims 1-10, 12, 14, 17-32, and 40-53 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

31. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON E. MATTIS whose telephone number is (571)272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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